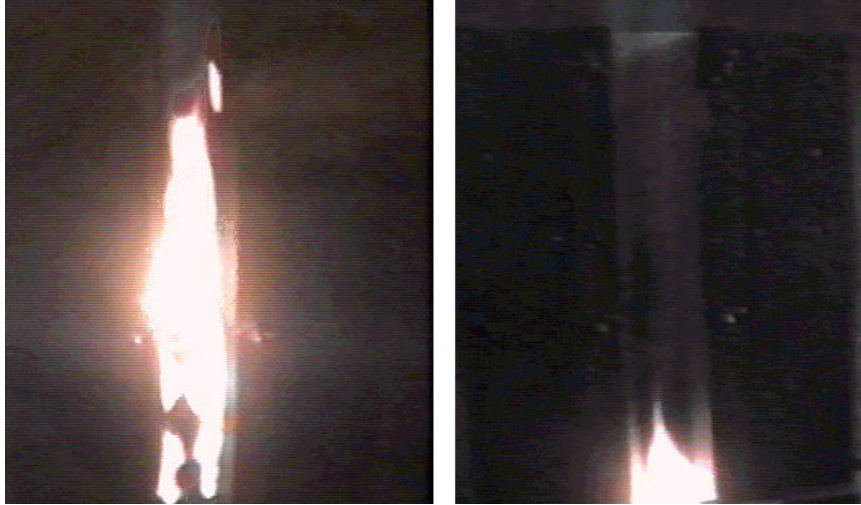# Batch/Lot Ignition and Combustion Sensitivity of Non-Metallic Materials

Objective

This effort will determine the impact of the recently proven batch/lot sensitivity of non-metallics in low pressure flammability tests, on existing flight programs, including shuttle systems and payloads, by identifying those material types affected. The objective will be accomplished by research material types, select representative materials, procuring selected material, determining test conditions, conducting batch tests, analyzing results, identifying where batch sensitive materials are used, and writing a final report.

Why Needed

The batch/lot sensitivity phenomenon has been positively identified in one specific material. It is anticipated this cursory research project will also identify the phenomenon in at least one of the selected material types. If batch sensitivity is identified in another material type, then more research must be initiated to identify all the material types which are batch sensitive and the causes for the batch sensitivity. It is also expected that specific materials from the material type(s) identified as batch sensitive will be in use on the Space Shuttle and its systems and payloads. Additional flammability batch testing may be recommended for in-use materials depending upon the materials use thickness and environment. A formal recommendation that all future materials tested for flammability be batch tested until it can be proven that batch sensitivity is not an issue with that particular material will also be made. Finally, if batch sensitivity is identified in another material type, the results from this study will be submitted to the American Society for Testing Materials (ASTM) Committee G-4 on Compatibility and Sensitivity of Materials in Oxygen-Enriched Atmospheres for publication in the committee's next technical publication.

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Sponsor

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